

# VIRGINIA WILDLIFE

MARCH 1990

ONE DOLLAR





# Editor's page

Here we go again. It's been 20 years and we're back where we started. Earth Day 1990. Seems like everyone's behind it, too, just like we all were back in 1970. Heck, we've even changed National Wildlife Week from its traditional date in March to coincide with the monumental day in April of "environmental consciousness-raising," or whatever you want to call what you're supposed to feel that day.

I think I've been there before.

Go ahead, call me a party pooper, a stick-in-the-mud, or a skeptic, but I'm not sure how much more "consciousness-raising" we need these days. All you have to do is look around to know that we're in trouble. The question is: what are we going to do about it? Well, if you read about what's going on in April, it looks like we're going to try some of the same abracadabra we tried in 1970. We're going to try recycling again, and we're going to oil up our bicycles, swear off our cars, and put water-saving devices in our toilets. We're going to close our eyes and hope it works. And we're *really* going to be committed this time.

Aldo Leopold wrote 50 years ago that ecology is too easy, and in our desire to make it even easier for the general public to swallow, we've trivialized it. Now, he wasn't saying to dump the easy things like riding the bus and separating your trash. But he was saying that you just can't solve the environmental problems we face by writing to your congressman or recycling aluminum.

For the past 20 years, we've been tiptoeing very carefully around the hard stuff that requires a change in thinking. The hard stuff is consider-

ing actions that may not be in the best interest of you or your family, but are nevertheless the socially right things to do—even if the odds are that you will *never* get thanked for it, and you'll most certainly be labeled a fool for it.

For example, we would rather not consider the social benefit of not developing a piece of riverfront property we have acquired. After all, how would you explain such an irrational act that would result in terrific economic loss to your family, your friends, and your neighbors?

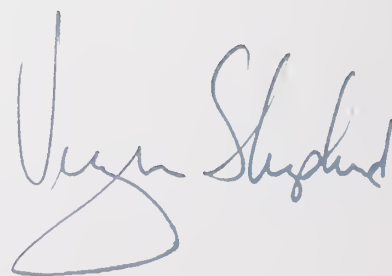
The hard stuff is considering the option of telling our county governments that we don't want anymore shopping centers or office buildings or even housing developments in our area and figuring out a good argument when your Board of Supervisors tells you that you have no right to tell someone that they can't develop perfectly good land. The hard stuff is considering the lunacy of our entire permitting system, which is based on the granting of licenses to pollute. How *do* you confront a business and tell them they simply won't pollute? How do you tell a car manufacturer that taking 10 years to control emissions isn't good enough—that today is what we *will* have from them?

You're talking scary stuff, here. You're treading on freedoms that people hold dear in a democracy. You're treading on a perfectly sensible, wonderful, fruitful way of life—and you're going to think about *changing* it? Not only that, you're talking about a change in thinking that invariably means *less* and not more, and includes personal sacrifice and loss. It's easy to see why most of us simply avoid the confrontation

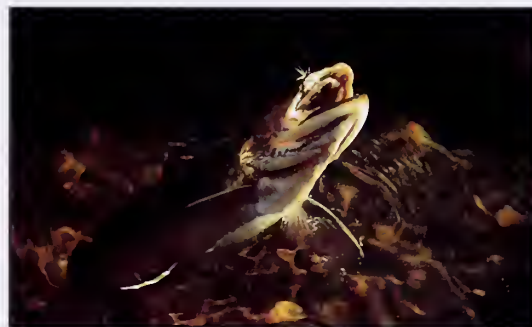
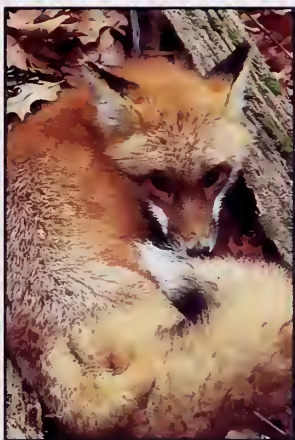
and hang on for dear life to the status quo, easing our consciences with compost piles and trash separation, hoping beyond hope that we won't ever really have to face reality.

My friend Liz is becoming a philosopher of sorts. She was viewing the state of the world recently and pronounced, "You know, the environmental problem is not the spotted owl and old growth forests versus lumbermen. The problem isn't whether or not an animal will live or die if you develop or destroy an area. The real problem is people against people. And that has nothing to do with wildlife or habitat. The animals are just trying to survive while we're fighting amongst ourselves for what we want."

Liz had cut through the easy stuff, which included everything from arguments over how much land is enough land for an endangered species to survive, or how much is too much pollution from cars and industries. Liz faced the hard stuff. I think that's perhaps what we should be doing on Earth Day this year. Perhaps we should be spending less time picking up trash and parading around in T-shirts that read "Think Globally, Act Locally," and spending more time thinking about a new way to live.—Virginia Shepherd



# VIRGINIA WILDLIFE



## Cover

The red fox (*Vulpes fulva*) is one of Virginia's many predatory mammals to whom spring signals the end of the lean pickings of winter. Small rodents are a preferred food item, like the native white-footed mouse (*Peromyscus leucopus*) featured on the back cover. An avian predator that also relishes small rodents is featured this month on page 8; photos by Gary Meszaros.

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photo by Roy Lowe

# Getting Started

***"I've got something for you boy. It's called a lure and it will catch lots of fish."***

by Bruce Ingram

As a boy, a friend and I used to ride our bikes down to Masons Creek, a small stream running through Roanoke County. Lee and I were too young for girls and cars, and too old for the games that the younger boys (kids, we called them) participated in.

We weren't very sophisticated anglers, content merely to dangle night-crawlers under oversized red-and-white bobbers. Redbreast sunfish and rock bass were caught (in our ignorance, we called them "perch") and our summertime days were just grand. Then, one day something happened that forever changed my outlook on fishing. My Uncle Ed, who lived in faraway Danville, came to visit. Speaking in tones that conveyed great wisdom he said, "I've got something for you, boy. It's called a lure and it will catch lots of fish."

I was skeptical. The artificial was huge and had a big blade that rotated when you flicked it with your fingers. And there were three large hooks



photo by Tom Evans

hanging down. I knew that the perch in Masons Creek couldn't—or wouldn't—get their mouths around that chunk of metal.

The next time I pedalled down to Masons Creek I gave the artificial a try—Uncle Ed had called it a spinner—but only after I had exhausted my supply of worms. I had been casting and retrieving the spinner for a while when suddenly I hooked into what was then the biggest fish of my life. The creature was a smallmouth and it measured an incredible nine inches—only in my dreams had I ever hoped to catch a fish of that immense length.

*Starting out in smallmouth fishing doesn't have to be a big expensive production. Here are some tips that will help you start out right on a sport that will last a lifetime.*

After doing battle with a fish that not only fought harder than sunfish, but that was determined to spend more time above the surface than below it, I passionately decided that day to learn everything I could about this fish.

I'm 37 years old now, and I don't ride my bike down to Masons Creek anymore. I discovered girls a long time ago—even married one and we have two kids—but I still am passionately trying to learn everything I can about smallmouth bass. Today, getting started is as easy as it was for me 25 years ago. And there are a few steps to take which can make the process even simpler.

It all starts with the rod, and I recommend one that is made from graphite and has a medium action. Graphite is strong enough to fend off the runs of a bronzeback, and yet it is also sensitive so that you can "feel" when a bass delicately picks up a plastic worm or mouths a live minnow. The medium action is just right so



that you can not only enjoy the fighting ability of a brown bass, but also have enough rod muscle to turn one when it heads for heavy cover.

A rod's action basically has to do with its strength. Purchase a light-action model and you will have trouble setting the hook while using baits such as plastic worms. Buy a heavy-duty rod and you may well "overpower" the fish.

There are dozens of fine spinning reels on the market, and my only advice here is to obtain one that matches your rod. For example, I own a Shimano Speedmaster reel that was engineered to perform well with a Shimano Speedmaster Fightin' Rod and this combo casts extremely well. That rod would cast very poorly if I paired it with an ultra-light spinning reel that was spooled with two-pound test line. There are numerous fine rod and reel combos made by the various tackle manufacturers. Read the literature in the outdoor catalogs and then order by mail or visit your local tackle shop. Usually doing the latter is best when you are just starting out—and be sure to comparison shop before making a decision.

Line is the next consideration. For years, I preferred a clear six-pound test. But for the past four or five years, I have opted for low visibility green line in eight-pound test. The green strand, made by Trilene, is next to invisible in the water, which is important when dealing with spooky bass in low, clear situations. And I have found that the eight-pound mono gives me just the extra strength needed to retrieve snagged lures without having to break them off. This same extra power is also good when playing larger mossybacks.

Regardless of which pound test you select, change it often. Line is inexpensive and there is no excuse not to use fresh mono. Given the smallie's affinity for rocks, after just a few hours of casting, the last three or four feet of your line will be pocked with nicks and cuts. Remove that last yard or so several times during a day's fishing (but put it in a trash

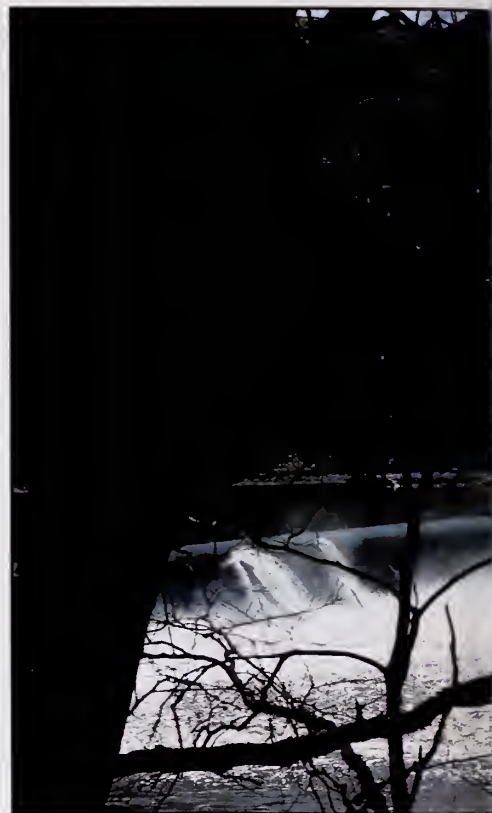
bag—don't throw it overboard where it can entangle birds and mammals). And spool on totally fresh line after every fifth or sixth trip. This may sound like an unnecessary exercise, but lose just one oversized bronze-back because of frayed line and you will find that being frugal with your fishing line is not wise.

The next step is deciding where in the river or creek nearest you is the best place to prospect for bass. My favorite place has long been an eddy. These swirling backwaters entrap baitfish and attract bass at the same time. I have seen eddies on the James River that were 20 to 30 yards across and ones on a creek near my house that were only a foot or two in width. The common denominator is that both eddies hold fish from spring through late fall.

Another good place is a current break. Basically, this is a rock or log that breaks the flow. Smallies can rest in this pocket water, yet have the opportunity to dash out and attack anything that drifts by them. Usually only active fish—and thus very catchable ones—are lurking behind current breaks.

Ledges, rock piles, submerged trees, and undercut banks are a few of the other places that can typically be counted on to hold bass. Whenever working these places, try to approach from downstream. Smallmouths feed facing into the current as all stream fish do, and you will likely spook them if you wade downstream. Another wading tip involves how and where you make your way. It is very important to softly "slide" your way upstream instead of taking steps. Fish are acutely aware of any scuffling sounds made below the surface. Take your time.

Be sure, also, to try to blend in with your surroundings as much as possible. I do this by hugging the shoreline and by trying to stay inside any streamside shade created by overhanging trees. If your shadow extends out over a pool or if fish glimpse the motion made by casting, your chances for success at that hole are minimal.



*Smallmouth bass fishing is an easy sport to take for this prized game fish.*

The last topic to be covered here is which baits and lures to use. I have saved this one for last because it is the *least* important aspect of spinfishing for smallmouths. Whenever someone catches a nice bass, the first question the individual is always asked is "What didya catch 'em on?" The old timer will likely say that he fooled the trophy by tossing a "Super Pro Big Bass Lunker Buzzbait made by Big Lass Lures of Waco, Texas." Well, that's all well and good, but if that bass was in a feeding mode, chances are that just about any smallmouth lure or bait would have sufficed. Chances are that more would have been learned if our hero had been asked what type of structure or cover he typically fishes for bass.

After years of fishing, I have finally come to conclude that if the smallies are in an active mode, just about any well made artificial will produce. If they are in a neutral feeding mode, certain lures will outperform others. And if the fish are inactive, live bait is your best option.





any age. And, Virginia's rivers are unparalleled when it comes to fishing  
The New River; photo by Cindie Brunner.



Smallmouth bass; photo by Doug Stamm.

That said, let's take a look at some of the imitations that do the job on neutral bass; that is, bass which aren't aggressively feeding, but that also haven't been turned off by a cold front. The selection is short and simple: 1½ to 3-inch floating-diving minnow plugs such as those made by Rapala; ⅛ to ¼-ounce crayfish crankbaits such as those made by Rebel,

Bomber, Bagley, and Bill Norman; 6-inch plastic worms in colors such as purple, green, and black; and 1/16 to ¼-ounce grubs and jigs in white, brown, or orange.

The Rapala works great for surface action; the crankbaits do well for bottom-hugging fish, and the grubs, worms and jigs handle all the water in between and are superb when a stream is low and clear. 'Nuff said.

I used to have a prejudice against live bait, feeling that it wasn't "sporting." That was true even though I, like many anglers, started out with the real thing. Now being a "purist" doesn't seem to mean much—especially if I am given the option of catching no bass with lures or catching bass with bait. Hellgrammites, minnows, crayfish, and salamanders will all take bass—regardless of their feeding mode. All you need is a No. 6 or 8-sized hook, a leader, a snap (to prevent line twist) and a small split-shot. Cast the little beasties into the areas discussed earlier, and you're set.



Minnow-like plugs and crankbaits are among the best smallmouth lures available; photo by Bruce Ingram.

Recently, a lady friend of my wife's and mine came over to our house. She brought her boy along who was nine years old and wanted to start stream fishing. The boy and I discussed the basics and then he asked if I had any "fishing things" he could have.

My Uncle Ed's spinner has long held an honored place in my tackle box even though I hadn't used it in years. The plan was to pass the lure onto my little girl when she became old enough to use it correctly. I had a change of plan. I took the old, rusty spinner out and presented it to the boy.

"I've got something for you, boy," I said. "It's called a lure and it will catch lots of fish."

I am absolutely sure that one day that boy will catch a smallmouth with Uncle Ed's spinner. Then he, too, will know what this most splendid of all game fish is all about. □

Bruce Ingram is the Virginia editor for Outdoor Life magazine and a frequent contributor to Virginia Wildlife.



photo by Rob Simpson

# Sweetheart Owl

*The barn owl endears itself to farmers and bird lovers alike. With its terrific "mousing" ability, this owl with the heart-shaped face is indeed a sweetheart of man.*

by Chuck Rosenberg



I am fascinated by the common barn owl. There is no other way to explain why I have invested a great deal of time over the last several years willfully enduring difficult, precarious, and occasionally embarrassing situations to study this bird. Research partners and I have chased radio-tagged barn owls from sunset to sunrise for months in efforts to document their habitat use. We have endured numerous interrogations from landowners and police who discovered us frequenting rural roads at dreadful hours of the night with our mass of electronic surveillance equipment. I have scaled decrepit 50-foot tall World War II submarine watchtowers and climbed into the rafters of deteriorated barns in efforts to inspect barn owl nests. I have frequently collected regurgitated barn owl pellets and just as frequently needed to explain to appalled on-lookers the value of the foul-looking objects for food habits studies. And I tolerate the occasional spray of excrement discharged during barn owl "strafe runs" aimed at discouraging our efforts to inspect nests. The only explanation I can offer for my irrational behavior is a love for this wonderful bird.

It is reassuring to know that many other people share an enthusiasm for the barn owl. It has a diversity of followers, ranging from individuals with merely a passing interest in birds to devoted ornithologists. Many farmers are thrilled to have barn owls using their buildings and they closely monitor "their" owls, noting whether or not they nest, how many young fledge, and other vital information. And I have met people living in urban environments who demonstrate an equal enthusiasm for barn owls nesting on their property. In addition, several naturalists around the state devote much of their spare time to working with this bird. Don Ober and the Montpelier Naturalists group spent hours building and erecting 40 barn owl nest boxes around Orange County last winter and monitoring the use of these boxes last summer. Ken Bass and Mark Causey

maintain 35 barn owl nest boxes in Prince William County. They spend so much time with this project that their wives call themselves "barn owl widows."

Why is there such interest in this bird? Well, besides being a beautiful owl with a mysterious and enchanting natural history, the barn owl lives in close association with man and is an excellent mouse catcher. Also, it is uncommon enough to spark a substantial interest in its well-being. Like many rarities, it has become quite a prize to find.

An adult barn owl is a surprisingly attractive bird. When viewed from the front or in flight, it appears strikingly white because its breast, belly, and the underside of its wings are predominantly white. The barn owl's upper plumage is a mixture of golden brown and gray which is especially beautiful when viewed in full sunlight. The barn owl's coloration has inspired the names "white owl," "golden owl," and "yellow owl" for this bird.

A barn owl's finest feature is its face. Now I'm sure you would dis-

agree wholeheartedly with this statement if all you had seen was the face of a young barn owl. Their bare, vulture-like faces epitomize a "face only a mother could love." But, once these young have reached fledging age, a distinctly heart-shaped facial disk has formed. Some people note its primate resemblance and refer to the barn owl as the "monkey-faced owl." Others call it "sweetheart owl." Of all the names I have heard for the barn owl, I like this one the best. It incorporates a heartfelt affection for this bird while describing its appearance as well.

Although the barn owl may be considered beautiful in looks, its voice is anything but beautiful. Its "song" is a loud hissing scream. This, like other bird songs, is used for declaring territory and for attracting a mate. One of its calls, the warning scream, has a similarly eerie quality. It is sharper and typically more drawn out than its song (likened to the squeal of car brakes just before a collision, or the scream of a woman being murdered), and is the response to a person approaching a nest site.



*The barn owl, once a familiar and welcome sight to farmers in Virginia, has experienced an alarming decline in recent years. Research funded by Virginia's Nongame and Endangered Species Fund finds that the destruction of habitat and lack of suitable nesting sites are the major threats to its survival; photo by Rob Simpson.*



Young in the nest and recently fledged young persistently emit a raspy hiss to advertise their presence and their desire to be fed. Adult owls also frequently emit a series of rapid, very high-pitched, twittering notes when presenting food. The barn owl's vocal repertoire has inspired a variety of names for the bird: screech owl (not to be confused with the Eastern screech owl, a Virginia native with a much less screechy quality to its voice), screaming owl, and hissing owl.

It is no wonder that Europeans have nicknamed the barn owl "spirit owl," "white night hag," and "devil-ing." Strictly nocturnal, the owl is often found in cemeteries and abandoned, derelict, "haunted" buildings. The whiteness of its underparts and its slow and silent flight give it a ghostly appearance. And, a pair of barn owls with a brood of young can produce a mixture of screams, screeches, and hisses that could seemingly come from nothing but a band of demons.

I must admit that I myself have jumped at the sight or sound of a barn owl on occasion. I, too, may have passed on some marvelous ghost story about each incident had I not known the identity of the apparition. Indeed, I remember one evening in Halifax County well. I was investigating a report of a pair of barn owls nesting in a cemetery. The report itself was a bit mysterious because the reporter preferred to remain anonymous. He also insisted that I avoid advertising the presence of the owls and that I did not unduly disturb the birds. So I visited the site at midnight. I entered the graveyard with my flashlight off, found a pathway that led between broad tree trunks and evenly spaced tombstones,



Illustration by Ian Willis, courtesy of The Barn Owl, Buteo Books, Vermillion, SD.

*A ghostly apparition in the night, the barn owl has been mistaken for many a restless soul wandering on a dark night.*

and walked about 100 feet towards the muffled hisses of what I figured was a nest of young barn owls. I stopped for a moment to try to identify which huge oak tree housed the nest cavity. The silence was shattered by a blood-curdling scream. A chill ran down my spine and I jumped a good foot off the ground! A pale form floated overhead, screamed again, and disappeared into the darkness. I stayed for a minute or two to pinpoint the nest location, while the owl continued its haunting performance.

Even though the barn owl can terrify the strongest of souls, it is nonetheless well liked by most Virginians. Its eerie nature actually seems to provide an added appeal to the bird, once people realize they have owls, not ghosts in their backyards. A Rockingham County family, for example, enjoys spending summer nights watching a nest beside their house and listening to the eerie conversation between adults and young.

Not picky about its ghostly haunts, *Tyto alba* is found throughout the tropical and temperate latitudes of the world, and most everywhere it lives can be found in close proximity to man. Like the Eastern screech and barred owls, the barn owl is basically

a tree cavity owl, though it is not quite as choosy as its cousins and will often use tree cavities near human dwellings. The barn owl regularly nests in farmyards, churchyards, cemeteries, parks and along city streets. It has even been found within the city limits of Norfolk, Hampton, Newport News, Williamsburg, Petersburg, Charlottesville, Danville, Lynchburg,

Roanoke, Salem, Broadway, Luray, Warrenton, and Washington, D.C.

Also, using man-made cavities, the barn owl often roosts on a rafter or other convenient perch inside barns which are fairly undisturbed by human activity. Elevated platforms, cupula shelves, and amongst hay bales are typical barn nesting sites. Silos are used even more frequently than barns. Old fashioned, inactive, roofed silos are very often used as daytime roosts and may support a nest if there is a platform or old silage into which the owls can excavate a nest cavity. Topless silos are also used for roosting and occasionally for nesting, even though they offer much less protection from the elements.

In addition to barns and silos, the barn owl has been known to nest in wooden water tanks, coastal duckblinds and World War II submarine watchtowers. There are a number of other somewhat unusual sites where the barn owl has nested in Virginia. Sites within buildings include a small room within Hampton's NASA facility, the grain chute of an abandoned Page County mill, the floor of an inactive ice house in Radford, the attic of a Rockbridge County family's home, a ledge inside the chimney of a Loudoun County home, a bushel basket in the top of a Newport News silo, and behind a decorative panel



in a Rockingham County church. Other structures includes a dry well in Carroll County, and Orange County railroad coal tower, a partially constructed deer blind in Accomack County, bridges crossing the Potomac and the James Rivers, barrels buried in a Rappahannock River embankment, and a steel girder five stories high in a Norfolk coal pier.

Since the barn owl frequently lives near man, people who own barns or silos in which barn owls live typically interact with and often establish quite a fondness for the bird. They are proud that their property supports owls and they enjoy observing the birds. At many of the farms I have visited, the families speak of their owls much like many pet owners speak of their dog or cat. Some have detailed notes of the owl's activities over the years. Many have "family pictures" of young in the nest.

However, this close association with man occasionally gets the bird into trouble. Its chronic habit of investigating any sort of cavity or recess compounds the potential trouble it can get into. For example, a barn owl had to be removed from a Madison County school incinerator

that it had chosen for its daytime roost. At other times, barn owls have entered buildings through a small entrance, and unable to find their way out, have perished. The barn owl frequently imitates Santa Claus by descending into chimneys in search of a nest or roost site. On one occasion in Prince William County, a couple heard scratching sounds coming from their wood stove and upon investigating, found a soot-laden owl. On another occasion, a Chesterfield County family heard what sounded like the screams of a wildcat coming from behind the glass doors of their fireplace. They called their local game warden who proceeded to remove a barn owl. At times, less fortunate barn owls have become wedged or injured inside a chimney and died.

The barn owl endears itself to many for its mouse catching ability. An adult barn owl typically consumes six to eight small mammals a night. When feeding a brood of young, a pair may capture 50 or more small mammals a night. The voracious young gulp the prey whole and wait impatiently for the next delivery. When prey are abundant, the adults may catch enough to satisfy

the entire brood and stockpile additional animals (possibly as convenient "midday snacks" for the young). A friend and I visited a Charles City County nest site at dawn a few years ago and found six well-developed young with full stomachs and an additional five meadow voles stacked neatly at their sides.

The barn owl has a number of adaptations which enable it to be a superb mouser. It can detect prey in extremely low light due to the physical and biological modifications of its eyes. Its well-defined facial disk and asymmetrical ear openings help it locate and capture prey using hearing alone. This is especially advantageous for capturing animals like voles and shrews which are often concealed from view as they travel in runways beneath grass cover. The barn owl's low body weight, combined with a large wing surface area, makes it very "light on its wings." Like most owls, its flight is nearly silent, so that it can hunt on-the-wing without interfering with its hearing or alerting its prey. All of these features are incorporated into a predator which can efficiently hunt extensive open areas, including habitats such as grasslands, in which prey may be totally hidden from view. It hunts with a low and rather erratic flight and frequent hovering, using its acute hearing and sensitive eyesight to locate animals, and then capturing them by dropping suddenly with talons spread. It is unfortunate that the barn owl hunts mostly after dark, because its graceful foraging flight is delightful to watch.

Grassland is the most important habitat for the barn owl. Lush grasslands (such as saltmarshes, meadows, lightly-grazed pastures, and hayfields) support large prey densities and provide excellent barn owl foraging habitat. Fallow fields, especially when dominated by broomsedge or other grasses, can also be important foraging areas. The Great Valley, northern Piedmont, and coastal marshlands with their abundance of grassland support the largest numbers of barn owls. Corn and soybean fields may support large prey densities, but are not food foraging areas because prey



Although magnificent as adults, barn owl young are less than beautiful, with vulture-like faces that fill out into the distinctive "sweetheart" shape by the time they reach fledging age; photo by Rob Simpson.



are quite inaccessible beneath the dense foliage of these crops. In marginal environments, such as the intensively farmed regions of Virginia, the barn owl may hunt woodland treetops for birds, barnyards, and small grain fields. But, such areas support low barn owl densities.

The meadow vole, or field mouse, is the most important prey animal for the barn owl in Virginia. It is most abundant in grassy fields with dense ground cover, especially in damp situations. The barn owl may feed heavily on two related mice, the marsh rice rat and the hispid cotton rat, in areas of the state where it encounters them. Other prey which may occasionally be important to the barn owl include the short-tailed shrew, house mouse, Norway rat, least shrew, and various birds (mostly blackbirds, sparrows and meadow-larks).

As plentiful as one might think mice and voles are, the barn owl, nevertheless, is a rather uncommon bird in Virginia. In fact, the barn owl is much less common today than it was even as recently as 15 years ago.

Thus, in 1984, the Virginia Department of Game and Inland Fisheries (VDGIF) began its funding of three interrelated barn owl projects through its Nongame and Endangered Species Fund. Supported also by the Virginia Society of Ornithology, the Williamsburg Bird Club and the College of William and Mary, these three projects included a radiotelemetry study which identified the foraging habitats important to barn owls; a population status study which identified barn owl nesting and non-nesting sites around the state; and a nest box construction and monitoring program which has provided 75 nest boxes around the state and monitored their use during the past four breeding seasons.

The VDGIF populations survey evaluation identified 111 sites around the state that supported nesting pairs of barn owls between 1976 and 1985. Only 43 (39 percent) were still active in 1986. Many of the sites were abandoned by barn owls due to loss

of habitat or loss of a nest site. At the majority of these sites, the surrounding habitat had been altered with commercial or residential development or by intensified farming practices so that the area was no longer suitable for barn owls. Many of the barns, silos, and water tanks that had once supported nests were no longer usable because they had been destroyed, deteriorated, or had entrances closed to prevent pigeon and owl access. The primary problem facing the barn owl in Virginia and throughout much of its range is the lack of productive grassland foraging areas in close proximity to a secure nest site.

What can be done to address the habitat and nest site loss problems? Preserving large areas of lush grassland would be an expensive undertaking for any natural resource agency or organization. We are fortunate that the USDA Conservation Reserve Program, aimed at conserving soil and water resources by removing highly erodible land from agricultural production, has produced an abundance of grassland areas. To date, over 65,000 acres of cropland have been set aside in Virginia. The majority of this acreage has been converted to grassland. This will certainly result in more nesting pairs of barn owls becoming established near these productive foraging areas. Much like the USDA Soil Bank Program of the 1940s and 1950s, the Conservation Reserve Program has provided an abundance of excellent habitat for wildlife across the country while meeting its own objectives of soil and water conservation.

In an attempt to curtail the nest site loss problem, individuals have been supplementing the availability of natural and man-made nest sites with nest boxes. This type of management is an old idea which has recently been revived. Years ago, European farmers designed nest boxes which were built directly into their barns and farmhouses. They recognized the mousing value of the barn owl and wanted to attract a pair to their property. Centuries later, barn owl enthusiasts are

constructing nest boxes in response to decreased barn owl numbers. Virginia's Nongame and Endangered Species Program sponsored the statewide barn owl nest box program which has erected 67 nest boxes to date, with additional boxes going up this winter. A total of 27 (40 percent) of the 67 available boxes have supported barn owl nests at least once between 1986 and 1989. We are very happy with this success rate and hope that even more will be used as they are discovered by barn owl pairs.

Two other large nest box programs, one in Orange County and the other in Prince William County, are bolstering barn owl numbers. In Orange County, seven (15 percent) of 40 nest boxes were used in 1989, an impressive success rate for the project's first year. In Prince William County, 19 (54 percent) of 35 nest boxes were active in 1989. This area now supports the highest density of nesting barn owls known in Virginia. Numerous other nest boxes built by other individuals are scattered around the state. Construction plans and supplementary information are available for anyone interested in building a barn owl nest box. Contact the Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104, 1-800-252-7717 and request the pamphlet entitled "Barn Owl Management in Virginia."

The barn owl is a marvelous bird. It is beautiful, enchanting, and an excellent mouse catcher. But, its future existence in healthy numbers across the state is in jeopardy. Only with our concern and attention will this extraordinary bird endure. □

*Chuck Rosenberg is a research associate with the Department's Fish & Wildlife Information System.*

*For more information on Virginia's Nongame and Endangered Species Program, write to: VDGIF, P.O. Box 11104, Richmond, VA 23230-1104. You can help by checking off a contribution to the program on your state income tax form or tearing out the gray card in the back of this magazine and sending a check into us—today.*



# Swampwitches

by Don Schwab

*Last summer, biologist Don Schwab made a startling discovery. Never before captured by biologists in Virginia, and only sighted two times since 1897, an elusive Eastern big-eared bat came out of hiding—for only a few days.*

*Schwab recounts the tale of this secretive endangered species that lives a quiet life in our deepest swamps.*

The name tells most of the story. With a body only four inches long and ears one-inch long, there is no mistaking the Eastern big-eared bat, also known by its much older (and less distinguished) name of LeConte's lump-nosed bat. The lump nose and the big ears are shared by two species of bats in Virginia, the Eastern big-eared bat (*Plecotus rafinesquii macrotis*) and the Western big-eared bat (*Plecotus townsendii virginianus*), and both animals are listed as endangered either by the United States Fish and Wildlife Service or the Virginia Department of Game and Inland Fisheries. Unless one is a bat expert, however, the tooth structure, toe hairs and undercoat colors that distinguish one big-eared bat from its lumpy nosed cousin will probably go unnoticed.

The Eastern big-eared bat was first reported in Virginia from the Dismal Swamp in June of 1897. The bat was collected as it left a cypress tree on Lake Drummond. Not until 1984 was another specimen of this strange bat seen in Virginia. The 1984 specimen was picked up from the front grill of a four-wheel drive vehicle which had been used on the beach during peregrine falcon banding opera-



photo by Don Schwab

tions in the city of Virginia Beach. The animal was photographed and discarded.

In June of 1989, six miles west of the site where the big-eared bat had been first reported in Virginia (92 years ago nearly to the day), Mike Lane had tied up his boat and was stepping up on the pier when he just about brought his hand down on a sleeping bat. Mr. Lane immediately notified me about this strange bat in his boathouse. Upon arrival at the boathouse the animal was caught by hand and identified. The bat turned out to be a male and apparently in good condition (based on the fact the animal tried unsuccessfully to devour my hand). Upon its release, the bat flew directly to the boathouse and nearly to the exact spot from which it had been removed. The lone male bat used the structure for four more days before disappearing.

Mary K. Clark, Curator of Mammals at the Raleigh Museum, has been working with the Eastern big-eared bat for several years and her work shows that males normally roost singly and within a short distance (as the bat flies) of a female colony. Encouraged by such information, we conducted searches of abandoned man-made structures within a one-mile radius of the boathouse where the big-eared bat had roosted in the hopes of locating a female colony. Unfortunately, we came up empty-handed. Still, we are hopeful that big-eared bats are simply eluding us, and that these secretive mammals actually may not be as scarce as sightings and collections would suggest.

Why? Because this bat is truly nocturnal. More common species of bats that are known to us usually become active at twilight (that time of day known as crepuscular) and are therefore easily seen. Along with the big-eared's habit of emerging after dark, it feeds by gleaning insects off the trunks of trees within the forest and below the canopy, much like a hummingbird feeds on flowers, making observations of the bat even more difficult. Add to that the fact that the bat is an animal of southern swamps,



*Virginia has two species of big eared bats and both are endangered in the state. The western species pictured above (*Plecotus townsendii virginianus*) is a bat of our western caves, whereas the Eastern big-eared bat (*Plecotus rafinesquii macrootis*) lives exclusively in our eastern swamps, roosting in bald cypress or black gum trees and deserted buildings; photo by Rob Simpson.*

and the creature becomes a master at the game of hide-and-seek. Wetlands, especially swamps, are areas that are hard to work in during the daylight hours, let alone after the sun goes down.

Research in other states suggests, however, that man-made structures near wooded swamps seem to be preferred roosting areas for this bat. Abandoned buildings having dark rooms, closets, or attics seem to be a requirement for Eastern big-eared bat use. Some theorize that the bats' use of deserted buildings near wetlands has to do with the lack of large enough bald cypress or black gum trees within its habitat. Or, perhaps the structures simply offer better roosting conditions than the trees. The range of this particular subspecies of bat does, however, correspond well with the range of bald cypress in the southeastern United States.

Virginia, through the Department of Game and Inland Fisheries (VDGIF) has established a recovery

team for the Eastern big-eared bat. Made up of people who are familiar with the animal itself, bat ecology in general, and/or the bat's habitats, the team is responsible for pulling together a plan to insure the survival of the big-eared bat. The first goal of the team is to determine the range and general abundance of the animal. Volunteers, researchers, and VDGIF Wildlife Division staff will conduct surveys of abandoned buildings within the southeastern corner of the state to accomplish this initial goal. Once the range within Virginia is known, work on the general ecology of the bat can be conducted and ways of preserving the Eastern big-eared bat can be developed.

Encouraging news comes from work on this species in North Carolina, where the bat was found not to be as scarce there as first believed. In fact, Mary K. Clark has found the bat in two North Carolina counties adjacent to Virginia and within 18 miles of Lake Drummond, which is the location of Virginia's first record for the species.

The biggest threat to this bat will most likely be loss of habitat, either through development or the timbering of hardwood wetlands. Pesticides may also be another factor that could lead to our loss of this animal from Virginia's list of mammals. It is still early, however, and with some luck and a lot of public support (especially through the nongame check-off on state income tax forms), this little known mammal and its habitat will remain a viable part of the ecosystem of Virginia and a treasured secret of our swamps. □

*Don Schwab is a wildlife biologist with the Department's Wildlife Division.*

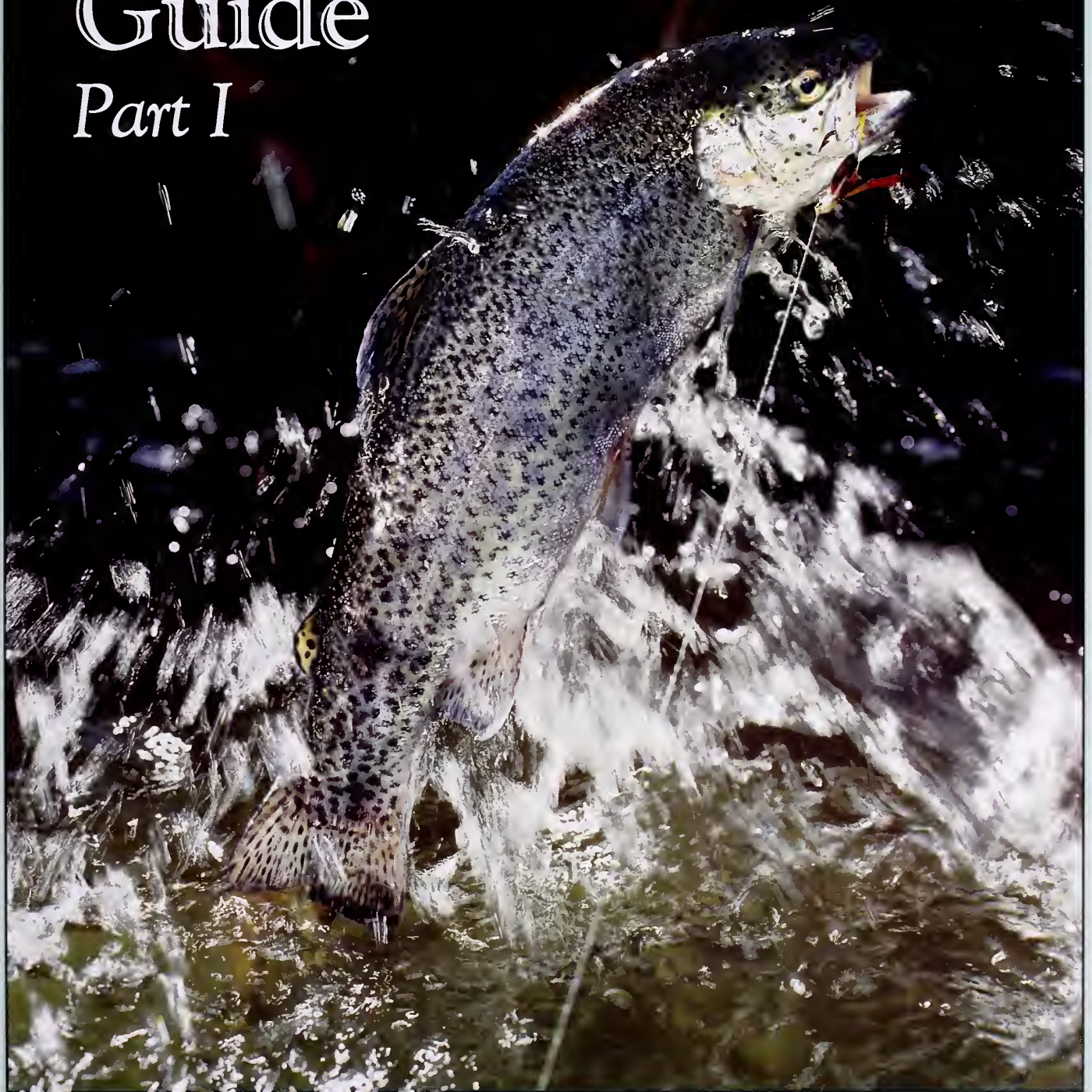
*For more information about Virginia's Nongame and Endangered Species Program, please write to the Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104. Also, don't forget to support the research on our nongame and endangered wildlife by checking off a contribution to the program on your state income tax form. Your contributions are the sole income of the program.*



1990

# Trout Fishing Guide

Part I



Rainbow trout; photo by Doug Stamm.



## Introduction

Virginia contains over 2,700 miles of trout streams in addition to numerous ponds, small lakes and reservoirs. The total includes over 2,100 miles of wild trout streams and about 600 miles of water inhabited with stocked trout. Virginia's diversified trout habitat offers a wide range of trout fishing opportunities.

Virginia's warm climate and topography generally limit trout habitat to the western portion of the state. The Blue Ridge and Alleghany Mountains provide the elevation to maintain low water temperatures year-round, while the valley between these ranges contains the unique limestone formations necessary to produce highly productive spring creeks.

Trout management in Virginia consists of three basic programs. The put-and-take stocking program is the best known and most popular. Such waters are periodically stocked with catchable size trout, most of which are caught within a short time period. The ease with which the stocked trout are captured is probably the main reason for the program's popularity. The wild trout program includes the management of reproducing populations of brook, rainbow and brown trout. Efforts are directed primarily at habitat preservation and proper regulation for protection of spawning stocks. The put-n-grow-n-take program involves sublegal trout stockings. This relatively small program is rapidly growing in size and popularity due to the high quality trout fishing provided.

Trout season in Virginia is open from the third Saturday in March through February 1st. Fishing success for wild and stocked trout is best from April through mid-June. After this period, warm weather and normally low flow conditions make fishing more difficult. The dedicated fishermen, however, can find good trout fishing opportunities throughout the year.



photo by Harry Murray

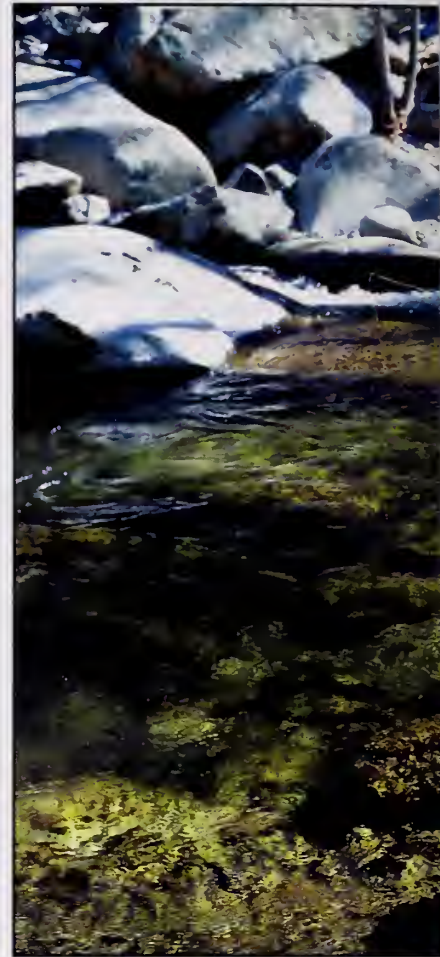
## Wild Trout Management

Basically, wild trout populations require cold, well oxygenated water, a clean stream bottom and good fish cover. In Virginia, most trout habitat losses occur through increased stream temperature, siltation and stream channel alteration.

Water temperature requirements may be the most critical factor in offsetting Virginia's trout populations and the state's generally warm climate and normally low summer stream flow do not help the situation. Most shaded mountain streams do not exceed 70°F. during the summer, which is suitable for trout. However, clearing of only a short section of streamside vegetation during logging or farming operations can raise temperatures significantly. In most cases, maximum stream temperatures in the low 70s are within the tolerable range for trout, but such temperatures improve the habitat for other stream fishes which trout can not compete against.

Siltation and other more direct forms of habitat alteration, such as channelization, have also cost Virginia many miles of trout water. Silted stream bottoms decrease the stream's insect population, an important source of trout food. Siltation also makes trout reproduction difficult. Trout lay eggs in stream gravel, and clean gravel is necessary to insure movement of oxygenated water over the eggs. As little as a quarter inch of silt over trout eggs can result in 100% mortality.

Alteration of stream channels is also of critical concern, not only due to the increased siltation it causes, but also to the removal of fish cover and the potential to raise water temperatures. Trout require overhead cover such as an undercut bank, large rocks or submerged logs. When such cover is removed, the trout leave.







*photo by Harry Murray*

*Rainbow trout; photo by Doug Stamm.*



Lack of suitable cover limits the number of large trout a stream can support.

Virginia has lost many good trout populations over the past two decades due to habitat degradation. However, the data made available by the Department's recently completed stream survey has supplied biologists with the information needed to protect critical habitat. The trend has now been reversed and it is expected that trout habitat will show steady quality improvement over the next 10 years.

The trout stream survey identified well over 2,000 miles of wild trout habitat. Biologists were encouraged to find that brook trout, the only trout native to Virginia, account for 80 percent of the wild trout resource in the state. Rainbow trout, a western introduction, have taken over most of the brook trout habitat in the southeastern United States. Virginia trout streams provide more fishing for native brook trout than all other southeastern streams combined.

Growth rates of wild trout, particularly brook trout, in Virginia are exceptional when compared with growth rates for similar streams in some other states. In most streams, adult brook trout in Virginia average 8 to 10 inches by their third year of age. In respect to the number of streams available and the size of trout present, Virginia probably offers the best native brook trout fishing south of New England.

The major management problem associated with Virginia streams appears to be excessive fishing pressure on many of the more popular wild trout streams with consequent over-exploitation. Unlike warmwater fish such as bass and bluegill, trout have a very low ability to reproduce. Therefore, in heavily fished areas, it is imperative to protect trout until they are able to spawn at least once. In order to accomplish this objective, a 7-inch minimum size limit has been imposed on all trout creel in Virginia. Such a limit will allow most wild trout to reach spawning age before they are harvested.



# Trout Species Of Virginia

Trout belong to the salmon family (Salmonidae) which are native only to the northern hemisphere. Salmonidae includes trout, salmon, char, whitefish and grayling.

## Brook Trout

(*Salvelinus fontinalis*)

**Coloration:** The brook trout is Virginia's most colorful trout species. Its back is dark olive green with light, wormy lines. Its sides have light spots on a dark background and red spots surrounded by a bluish halo. Often each entire side has a bluish tint. Its belly area is generally white with intense orange-red streaking during spawning season. Lower fins are distinctively marked with an outer white edge, black line and reddish coloration.

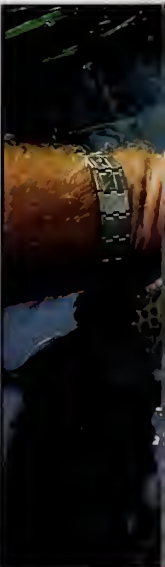
**Distribution:** The brook trout is endemic to eastern North America, meaning that originally it occurred in no other region. Initial distribution included the Atlantic seaboard south to Cape Cod, the Appalachians south to Georgia, then extending west through the Great Lakes to Minnesota and north to Hudson Bay. Due to its popularity as a gamefish, however, it has been introduced into many other regions and is now found in much of the western United States, Europe, South America, New Zealand and Asia. No other species of trout occurred in Virginia prior to man's stocking activities.

**Biology:** Brook trout generally spawn in October and November in Virginia. Spawning takes place in small streams, generally near the tail of a pool. Brook trout generally move upstream to spawn, often into the smaller headwater tributaries. An average female in Virginia lays approximately 100 eggs in a clean gravel bed. Eggs hatch about two months after they are spawned, and fry emerge from the gravel the following March.

Brook trout in Virginia reach sexual maturity at 2 years of age with an average length of 6.5 inches. Life span of this species is generally less



Rainbow trout; photo by Garry Walter.







Brook trout; photo by Harry Murray.



Brown trout; photo by Harry Murray.

than 4 years in this region with most fish reaching about 12 inches in length by this time. Brook trout to 18 inches have been collected in Virginia and some streams contain occasional trout of 12 to 16 inches. However, very few fish in the population can be expected to reach this size even with restricted fishing.

The diet of brook trout consists of almost anything in the stream. Although the preferred foods consist of aquatic and terrestrial invertebrates, salamanders and frogs are also taken. In most cases, available food is a limiting factor in the unproductive mountain streams common to Virginia. Therefore, fish must be nonselective and opportunistic to compete.

State Record: 5 lbs. 10 ozs.

## Rainbow Trout

(*Onchorynchus mykiss*)

**Coloration:** Its back is olive green often with a silvery cast, grading to a silvery white underside. The dominant characteristic is the pink band extending from the cheek to near the tail. Rainbows are generally well spotted with black spots intensifying on the upper fins and tail. The anal fin is often tipped with white in stream-bred fish.

**Distribution:** Rainbow trout are native to the eastern Pacific coast from Alaska to northern Mexico eastward to the continental divide. The steelhead is the same species, differing only in its need to migrate to and from the ocean. Rainbows have been widely distributed and now occur throughout the United States, Canada, New Zealand, Australia, South America, Africa, Japan, Asia, Europe and Hawaii. In Virginia the species is well established in the southwestern region of the state and is the dominant trout in the Mt. Rogers Area. North of Roanoke, distribution is quite scattered with most rainbow populations occurring in spring creeks. Although rainbow trout have displaced the brook trout over much of its range in the southeastern United States, most of the remaining brook trout habitat in Virginia does not appear suitable for the rainbow.

**Biology:** Life history of various rainbow trout populations can differ significantly. Certain strains will migrate from a lake or ocean into streams to spawn while others may remain in the same stream throughout their life. Also, time of spawning can vary greatly between populations. Certain behavioral and physiological differences are genetic, providing fish managers with additional tools with which to manage.

In Virginia, most wild rainbow trout populations are strictly stream residents. Spawning occurs in gravel beds similar to those used by brook trout. The major difference is that rainbow trout are basically spring spawners, laying eggs in March. Hatchery managers have altered this natural spawning time, however, to create fall spawners for hatchery purposes. This fall spawning characteristic is apparently retained by some of Virginia's wild rainbow trout populations. Rainbow trout also have greater reproductive potential than brooks with females laying 800 to 1000 eggs depending on the size of the fish. This higher reproductive capacity is probably the reason over-exploitation is less of a problem than it is with brook trout.

The diet of rainbows is quite similar to that of brook trout. Larger rainbows often show a greater preference for minnows than do brook trout, but the main diet still consists of invertebrates. Rainbows are somewhat more selective than brook trout, and therefore slightly more difficult to catch.

Rainbows have the potential to attain a much greater size than brook trout, but in Virginia's mountain streams they exhibit similar growth and age structure. In spring creeks and large reservoirs, however, rainbow trout over 5 pounds are not uncommon.

State Record: 12 lbs. 9 ozs.

## Brown Trout

(*Salmo trutta*)

**Coloration:** Its dorsal area is generally brown, giving way to silvery sides and a yellowish underbelly. Pronounced black spots, often sur-



rounded by a lighter halo are spread along much of its body, extending well below the lateral line. In addition, irregularly shaped red or orange spots are also present along its sides. Some dark spots occur on the dorsal, adipose and tail fin, but such coloration is not as concentrated as on rainbows. The adipose fin is generally an orange/red color.

**Distribution:** Brown trout are native only to Europe and western Asia. They have been widely introduced elsewhere and are now found throughout the eastern United States, southern Canada and the Rocky Mountains as well as in South America, Africa, Australia and New Zealand. In Virginia, brown trout distribution is limited, with most wild populations occurring in the Carroll, Floyd and Patrick County areas. Small scattered populations also occur in the lower portion of many larger wild brook trout streams throughout the state.

**Biology:** Brown and brook trout require similar spawning habitats often utilizing the same sites in streams containing both species. Brown trout spawn later than brook trout, generally in November and December in Virginia. They have a higher reproductive potential than the other two species, mainly because of their larger size.

Brown trout reach sexual maturity at 2 to 3 years of age. The life expectancy of this species is much longer than that of the other two trout. Although life spans of 10 to 15 years have been reported, brown trout in Virginia usually do not exceed 4 to 5 years of age. The longer life span naturally increases the potential size of the brown despite annual growth rates similar to brook trout. Small mountain streams that rarely have brook trout over 12 inches will often produce brown trout over 20 inches.

Brown trout are highly carnivorous, maintaining a diet of insects, crustaceans, mollusks, salamanders, frogs, rodents and fish. Fish and crayfish are the predominant diet of browns over 12 inches while smaller trout generally stick to invertebrates. Larger browns have a tendency to



photo by Harry Murray





Marion Fish Cultural Station; photo by Cindie Brunner.

feed at dusk and after dark, making the larger fish difficult to catch.

State Record: 12 lbs. 13 ozs.

## Catchable Trout Stocking Program

As in most states, put-n-take trout fishing draws the most interest and attention in Virginia, probably because of the availability of catchable size trout and ease of capture. Virginia's put-n-take program is supported by hatcheries located at Marion, Paint Bank and Wytheville. Three rearing facilities are located at Marion, Williamsville, and Montebello.

Trout eggs are collected from large brood stock in early fall at the hatcheries, and placed in hatching jars which maintain an even flow of well oxygenated water through the eggs. Jars must be constantly cleaned and dead eggs removed to control disease. After 25 to 30 days the trout begin to hatch. The small fry, as they are called, remain attached to their egg sacs for about 14 days, and draw their food from it. The fry are kept indoors in small troughs until the sac is absorbed and they begin taking small pelleted food. When they reach a suitable fingerling stage (2-3 inches) they are transported to rearing facilities where they are placed in raceways. The fish are fed several times daily for at least a year until they reach catchable size (9-11 inches). During this rearing period, it is necessary to clean raceways daily to control disease and occasionally grade fish to ensure that the larger trout will not eat smaller ones.

The cost of this program is derived

primarily from the trout license which is required in addition to a valid state fishing license to fish in stocked trout water. Annual output from the program is approximately 800,000 catchable trout in addition to variable numbers of fingerling and subcatchable trout used in other programs.

Streams are heavily stocked during the season closure in anticipation of the large crowds on opening day. Often surplus trout are available in the fall which were too small for earlier stockings. These fish are used for additional stockings, generally in October and December depending on stream conditions.

Stocked trout streams are marked with appropriate signs which identify the portion of stream stocked. Sections so marked are open to public fishing in accordance with agreements between the Department and private landowners. This is the only case where fishermen are not required to have landowner permission before fishing on private water.

Changes in the streams stocked periodically occur due to closures of private streams or additions of new water. The Department publishes an annual stocking list and reference should be made to it to insure that a stream is currently stocked.

## Fee Fishing Areas

The fee fishing areas offer put-n-take trout fishing with the added advantage that trout are stocked several times weekly throughout the season. The fee fishing program operates from the first Saturday in April through Labor Day, during which time a daily permit is required in addition to a valid state fishing license. A trout license is not required during this period. After Labor Day, regulations at the fee areas revert to general trout regulations and a trout license is required. The creel limit at these areas is five fish per day at all times.

### Clinch Mountain Fee Fishing Area:

The Clinch Mountain Fee Fishing Area is located in southwest Virginia,

about 7 miles west of Saltville. The area consists of the 330-acre Laurel Bed Lake and approximately seven miles of Big Tumbling Creek and its two major tributaries, Brier Cove Creek and Laurel Bed Creek. Big Tumbling Creek is a large, steep gradient stream with numerous small waterfalls and large, deep rocky pools. The two tributaries are much smaller with a more moderate gradient. The lake provides a put-n-grow-n-take trout fishery and is used to regulate summer flow in the streams. Trout are stocked daily throughout the fee period in the streams and fishing must cease at 7:00 p.m. to allow for restocking. Camping is available at the area and the Department of Game and Inland Fisheries owns and manages the surrounding land.

### Crooked Creek Fee Fishing Area

Crooked Creek is located in Carroll County, five miles east of Galax. The area consists of five miles of stream which is stocked daily. In addition, approximately two miles of stream are managed as a wild trout fishery. Crooked Creek is a wide, fairly low gradient stream with a gravel bottom. Surrounding land is mixed fields and woodlots not characteristic of the more common mountain stream drainages. As at the Clinch Mountain Area, fishing must cease at 7:00 p.m. to allow for restocking. No facilities are available at Crooked Creek for camping but private facilities are available nearby.

### Douthat Lake Fee Fishing Area

Douthat Lake is a 60-acre State Park impoundment located north of Clifton Forge. The lake provides fishing for bass, bluegill, pickerel and catfish in addition to trout which are stocked twice weekly. The lake and surrounding areas are administered by Virginia Division of Parks. Available recreation includes camping, hiking and swimming in addition to fishing. Cabins are also available for rent if application is made well in advance. The lake is located in a mountain setting with most of the surrounding land within the George Washington National Forest.



## License Requirements

All residents 16 years of age and older are required to possess a state fishing license to fish for trout. Persons who fish in *designated stocked waters* (those stocked with *catchable* trout) must have a separate trout license. A National Forest stamp is necessary when fishing in most waters within the George Washington or Thomas Jefferson National Forests. Refer to your fishing regulation pamphlet for specific exemptions.

When fishing in *non-designated trout waters*, such as wild trout streams or special regulation areas, the angler only needs to have a state fishing license. However, many of the special regulation areas require a signed permit card. These permits can be obtained at no cost from certain Department offices and streamside landowners.

Out-of-state fishermen who frequent *designated stocked waters* need to purchase both the non-resident fishing license and the non-resident trout license. However, the non-resident who wishes to fish for wild trout or in special regulation areas only needs a non-resident fishing license and the appropriate National Forest stamps and special regulation permits. For the discount-minded who want to fish for trout in *non-designated trout waters*, a five consecutive day license will substitute for the year-long non-resident fishing license.

The three fee fishing (pay-as-you-go) areas only require a state fishing license or a non-resident five consecutive day license and a daily fishing permit that can be obtained on site.

License requirements adopted in 1988 for resident senior citizens are as follows:

1. If you were born on or before June 30, 1922, you are only required to have proof-of-age when fishing for trout.

2. If you were born between July 1, 1922 and June 30, 1923, you are only required to have a trout license when fishing in *designated stocked waters*.

3. If you were born after June 30, 1923, you need to purchase a \$1.00 license annually and have a trout license when fishing in *designated stocked waters*.

All Virginia residents 65 or older do not need a National Forest stamp.

Please consult the regulation pamphlet for specific restrictions on size, creel, gear restrictions, and season lengths.

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The Department of Game and Inland Fisheries shall afford to all persons an equal access to Department programs and facilities without regard to race, color, religion, national origin, disability, sex or age. If you believe that you have been discriminated against in any program, activity or facility, please write to:

Virginia Department of Game and Inland Fisheries, Attn: Compliance Officer, 4010 West Broad Street, P.O. Box 11104, Richmond, Virginia 23230-1104.



photo by Bill Portlock





photo by Michael P. Gadmoski

## Stocking Plan

As the 1990 trout season approaches, preparations are being made to start stocking streams and lakes. The season will officially begin at 9:00 a.m. on Saturday, March 17, 1990 and end on February 1, 1991. The fishing outlook is good. Rainfall has been abundant and streamflows are excellent.

In order to more equitably distribute the trout statewide, a revised allocation system has been devised. Trout are allocated to streams on the basis of stream width, length, fishing pressure, amount of habitat, food availability, and the amount of access for stocking. Each of these criteria is evaluated and entered into a stocking formula to arrive at the number of fish to be stocked. Lakes are stocked on the basis of size and fishing pressure.

After opening day most streams will receive additional introductions through May 31. The number of times streams will be stocked will vary from 1-5. Poorer quality streams will receive the fewest stockings; while, the better streams will be stocked more often.

Streams to be stocked are listed by county in the following table.

	Brook	Rainbow	Brown
<b>ALBEMARLE COUNTY</b>			
Moormans River (N.& S. Forks)	X		
City Water Works (Sugar Hollow)	X		
<b>ALLEGHANY COUNTY</b>			
Smith Creek*	X		
Jerry's Run*		X	
Pounding Mill Creek		X	
Clifton Forge Reservoir*	X		
<b>AMHERST COUNTY</b>			
Pedlar River (Upper)	X	X	
Pedlar River (Lower)		X	
Piney River (S.Fork & Proper)	X		
Davis Mill Creek*	X		
Little Irish Creek*	X		
<b>AUGUSTA COUNTY</b>			
North River (Gorge)		X	
North River* (Upper)	X		
Falls Hollow* (Buffalo Branch)	X		
Braley Pond*		X	
Back Creek (S.Fork & N.Fork)		X	
Upper Sherando Lake*		X	
Lower Sherando Lake*		X	
Hearthstone Lake*		X	
Elkhorn Lake*		X	
Mill Creek	X		
<b>BATH COUNTY</b>			
Back Creek*		X	X
Pads Creek*		X	
Jackson River (Hidden Valley)		X	X
Jackson River* (Route 623)		X	X
Bullpasture River		X	X
Spring Run	X	X	X
<b>BEDFORD COUNTY</b>			
Hunting Creek*	X		
<b>BLAND COUNTY</b>			
Lick Creek*	X	X	
Wolf Creek		X	X
Laurel Fork Creek		X	
<b>BOTETOURT COUNTY</b>			
Jennings Creek	X	X	
North Creek*		X	
Middle Creek*	X	X	
McFalls Creek*	X	X	
Roaring Run		X	X
<b>BUCHANAN COUNTY</b>			
Dismal River	X	X	
Hurricane Fork		X	
<b>CARROLL COUNTY</b>			
Big Pauls Creek <sup>1</sup>	X		
Crooked Creek	X		
Laurel Fork Creek			X
Little Reed Island Creek		X	
Lovills Creek <sup>1</sup>		X	
Snake Creek (Fish-for-fun) <sup>1</sup>		X	
Stewarts Creek	X		
<b>CRAIG</b>			
Barbours Creek	X		X
North Fk. Barbours	X		
Cove Creek	X		
Potts Creek	X	X	X
<b>DICKENSON COUNTY</b>			
Frying Pan Creek		X	
Russell Fk.-Haysi		X	
Russell Fk.-Bartlick		X	X
Pound River		X	X
<b>FLOYD COUNTY</b>			
Burkes Fork		X	
Goose Creek		X	
Howells Creek	X		
Laurel Fork Creek	X		
Little Indian Creek	X		
Little River		X	
Mira Fork Creek	X		
Little River (W. Fork)		X	

	Brook	Rainbow	Brown		Brook	Rainbow	Brown
<b>FRANKLIN COUNTY</b>				<b>ROCKBRIDGE COUNTY</b>			
Maggadee Creek		X	X	Mill Creek	X	X	X
Green Creek		X	X	Irish Creek	X	X	
Runnett Bag Creek		X	X	South River		X	
<b>FREDERICK COUNTY</b>				Maury River (Goshen Pass)		X	X
Back Creek <sup>1</sup>		X		<b>ROCKINGHAM COUNTY</b>			
Hogue Creek		X		Shenandoah River (N. Fork)		X	X
Cedar Creek		X	X	German River	X		
Clearbrook Lake		X		Dry River	X		
Winchester Park Lake		X		Silver Lake		X	
Paddy Run	X	X	X	Shoemaker River-F.S. <sup>1</sup>		X	
<b>GILES COUNTY</b>				Hone Quarry Lake		X	
Big Stoney Creek	X	X	X	Hone Quarry Run*	X		
Dismal Creek*	X			Briery Branch Lake*		X	
<b>GRAYSON COUNTY</b>				Briery Branch	X		
Big Wilson Creek	X	X		<b>RUSSELL COUNTY</b>			
Middle Fox Creek	X	X		Big Cedar Creek		X	X
Big Fox Creek	X	X		<b>SCOTT COUNTY</b>			
Elk Creek		X	X	Little Stony Creek, Upper	X	X	
Helton Creek		X	X	Little Stony Creek, Lower	X	X	
Hales Lake		X		Stock Creek		X	
<b>GREENE COUNTY</b>				Big Stony Creek	X	X	
Lynch River		X		Straight Fork-Lower		X	
South River		X		Bark Camp Lake		X	
<b>HENRY COUNTY</b>				<b>SHENANDOAH COUNTY</b>			
Smith River (Dam)		X		Big Stoney Creek		X	X
Smith River (Lower)		X		Mill Creek		X	X
<b>HIGHLAND COUNTY</b>				Tomahawk Pond*		X	
Bullpasture River	X	X	X	Little Passage Creek*		X	
Potomac River (S. Fork)	X	X		Passage Creek		X	X
<b>LEE COUNTY</b>				Peters Mill Creek*		X	
Martin's Creek	X	X		<b>SMYTH COUNTY</b>			
Powell River (N. Fork)		X		S. Fork Holston River (Lower)		X	X
<b>MADISON COUNTY</b>				S. Fork Holston River Gorge*		X	X
Hughes River		X		Staley Creek		X	
Robinson River		X	X	Middle Fork Holston River		X	X
Rose River		X		Comer's Creek*		X	
Garth Run	X			Hurricane Creek*	X	X	
<b>MONTGOMERY COUNTY</b>				Cressy Creek*	X		
Craig's Creek*		X		Dickey Creek*	X		
Poverty Creek*		X		Lick Creek	X	X	
Roanoke River (S. Fork)		X		<b>TAZEWELL COUNTY</b>			
Tom's Creek		X		Wolf Creek		X	X
<b>NELSON COUNTY</b>				Cove Creek	X	X	
Tye River		X		Laurel Creek	X	X	
Tye River (N. Fork)	X			Roaring Fork	X	X	
S. Rockfish River <sup>1</sup>	X			Little Tumbling Creek	X	X	
<b>PAGE COUNTY</b>				<b>WASHINGTON COUNTY</b>			
Cub Run	X	X	X	Whitetop Laurel-Upper		X	X
Upper Passage Creek	X	X		Whitetop Laurel-Lower		X	X
<b>PATRICK COUNTY</b>				Tennessee Laurel		X	X
Ararat River <sup>1</sup>		X		Green Cove Creek		X	
Big Ivy Creek		X		Big Brumley Creek*		X	
Dan River (above Powerhouse)	X			Valley Creek		X	
Dan River (below Powerhouse)		X	X	Big Tumbling Creek*		X	
S. Mayo River (N. Fork)		X		Straight Branch*		X	
Poorhouse Creek	X			Beartree Lake*		X	
Rock Castle Creek	X	X		<b>WISE COUNTY</b>			
Round Meadow Creek	X			Clear Creek*		X	
S. Mayo River (S. Fork)		X		High Knob Creek*		X	
<b>PULASKI COUNTY</b>				<b>WYTHE COUNTY</b>			
Peak Creek (W. Fork)		X		Stoney Creek*		X	
<b>ROANOKE COUNTY</b>				Gullion Fork Creek*		X	
Glade Creek		X		W. Fork Reed Creek*		X	
Roanoke River-Roanoke		X	X	Gullion Fork Pond*		X	
Roanoke River-Salem		X	X	Francis Mill Creek	X		
Tinker Creek		X	X				

<sup>1</sup>—these streams will not be stocked preseason

\*National forest waters



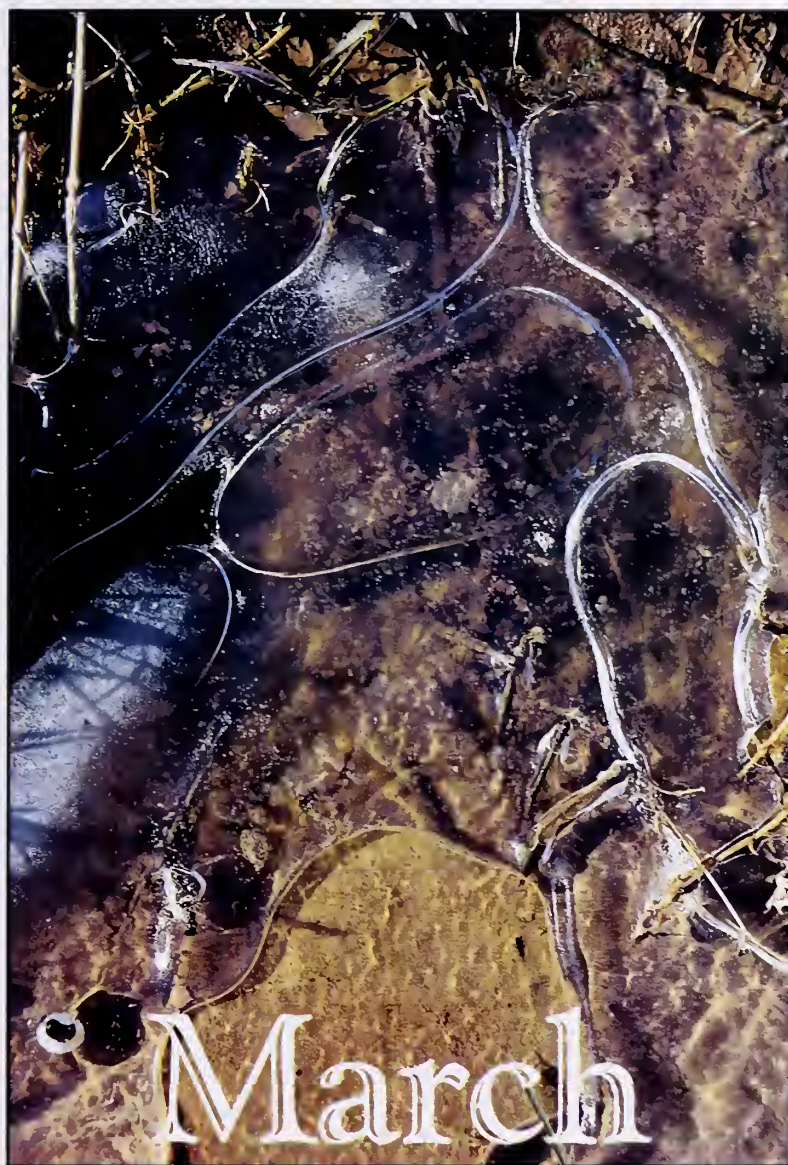


photo by Harry Murray

# Trout

*Virginia's March weather can be cold and bleak. So, how to fish for these trout? Review your tactics and know your streams.*

by Harry Murray



**T**he first month of Virginia's trout season usually provides excellent angling. Just how great it will be, however, depends upon how well you evaluate stream conditions and then select the appropriate tactics.

Since trout are cold-blooded, their metabolic needs for food are greatly influenced by the water's temperature. Plus, the efficiency with which they can feed is dependent upon the water level and flow rate. Taking advantage of these natural characteristics will assure good fishing, but neglecting them may result in poor catches. A good way to incorporate this information into your early season fishing is to evaluate the three different types of trout waters we have in Virginia.

The small, headwater feeder stream located high up in our mountains is the first type we'll consider. Many of these streams are located in the George Washington National Forest, the Jefferson National Forest, and the Shenandoah National Park.

Having fewer tiny brooks to contribute to their flows than streams in the valley floor, these streams naturally have less water volume and hence slower currents. I recently took advantage of this fact to improve my chances. I had driven several hours to get to one of my favorite streams, but as soon as I saw it, I realized it was much too swift for good fishing. Rather than head for another stream, I elected to hike up into the mountains several miles in order to walk around several wet-weather streams which had swollen the lower reaches of my stream.

This tactic was quite successful. In fact, I was able to take many nice trout on dry flies. Admittedly, many of the feeding stations which I normally fished were obliterated. However, since the water temperature was 46 degrees, the trout were quite willing to feed. In fact, their natural metabolism, mentioned earlier, demanded that they at least attempt to feed at that temperature.

Under these conditions—full streams with favorable water tem-

peratures—the fish will be located in protected areas. However, do not misinterpret this to mean they will be located in dead water areas where there is no current at all. They will seek out boulders or logs to break the current, but they will lie closely enough to this current to feed upon any delicate morsels it can bring them.

Several excellent dry flies for early season trout fishing on the small headwater streams are the Coachman Trude, the Dark Goofus and the Mr. Rapidan all in sizes 12 and 14. And, even if in the extreme upper reaches of these small streams there is too much water for good dry fly action, you can get excellent fishing with nymphs.

We encountered just such a situation on Benson Run west of Staun-

ton one spring. This stream, lying in the Shenandoah Mountains west of Staunton, is typical of these headwater trout drainages. Anticipating a high stream, we decided to approach it on a Forest Service road which would take us up into the head of the stream. It was still swollen from a late snow melt and we were compelled to fish nymphs. At this time of the year, the streams are carrying their maximum natural nymph load, and the trout took our flies readily. Two of the best nymphs for the early part of the season on small streams are the Red Squirrel Nymph and the George's Rubber Leg Stonefly Nymph both in size 10.

The most productive nymph tactic on these small streams is the upstream dead drift method. The nymph is cast up or up and across stream on a short



*High up on small headwater streams, wild brook trout often feed well on dry flies during the early season, like the Mr. Rapidan pictured right and to keep your hooks sharp.*





part of the season. It's important to use the right  
photos by Harry Murray.

line. Casts over 20 feet usually produce excessive slack line on the returning drift, resulting in many missed strikes. Glenn Morrison, of Harrisonburg, is one of the finest nymph fishermen I've ever fished with, and many of his casts are considerably less than 20 feet.

Spin fishing is also productive in the small mountain streams at this time of the year. Here, also, the upstream approach is best. Trout always face into the current, and entering a pool from above can easily scare them before one gets into casting position.

The Eppinger Dardevle in 1/32 ounce is an exceptionally effective spoon in these headwater trout streams. They are at their best when cast upstream and allowed to sink to the bottom before the retrieve is

started. Crank them back at a slow pace in order to achieve a wobbling effect rather than a spinning one. Every several feet of the retrieve, lift the rod tip several feet, then allow it to slowly drop back to its original position. This produces a jigging effect which often results in solid strikes from trout that neglected the uniform retrieve.

The second major category of trout streams found in Virginia are those located in the valley floor, close to where the headwater streams leave their high gradient mountain terrain. These may be formed as several smaller streams come together, or they may simply be the downstream extension of a single headwater that has picked up several tiny brooks.

These streams range from 20 to 30 feet wide and will have some pools

reaching four to five feet deep. Basically, they are just a larger version of the small headwater feeder stream. However, there are some subtle differences between the two that influence the ways the trout feed.

For example, these streams often flow through limestone areas which make them much better suited to larger populations of aquatic insects. Several hatches of early season stoneflies occur on these streams during March, prompting the trout to feed well on the surface. When this type feeding is seen, you should carefully check the water in order to determine the exact color and size of the fly and try to match it as closely as possible. One word of caution: several of these hatches produce flies in the size 18 to 20 range. When these are present, it is best to use a leader tapered down to

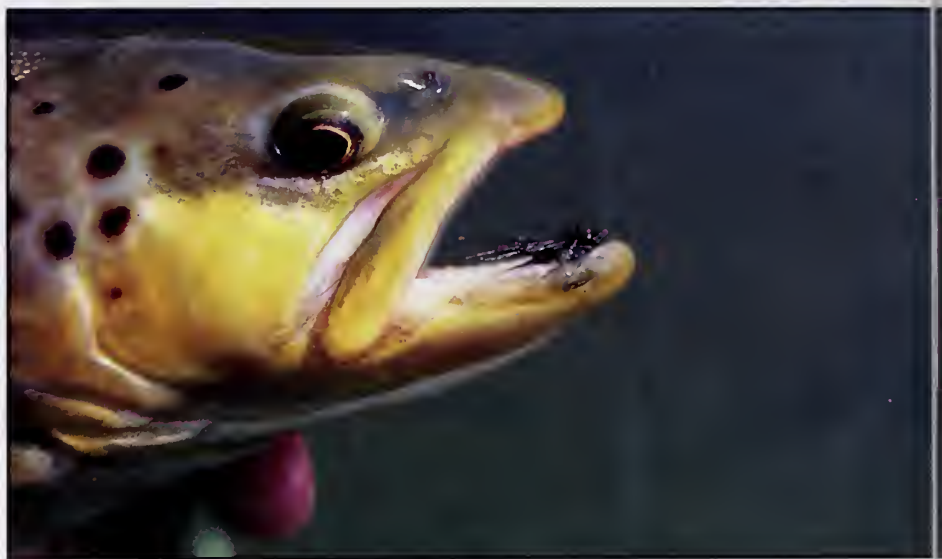


5X or 6X. The trout often become quite selective during concentrated hatches, and they want our flies to look and drift like the real insects. The larger, searching dry fly patterns used to simply cover the water in the headwater streams are seldom effective during these heavy hatches. In fact, I seldom do well on these larger streams with any dry flies, unless I can find the trout already feeding on the surface. Attempting to "pound them up," although it may take a few fish, is not a very efficient tactic on these streams. Fly fishermen will do much better with nymphs. But, the nymph fishing tactics used on these larger streams are a little different than those used on the smaller streams high in the mountains.

A common characteristic found in many of these larger streams are pockets of water three to four feet deep just a short distance below the riffles entering the pools. Trout often concentrate in these areas because of the abundance of large aquatic nymphs which live here. A tactic I call "picking the pockets" is extremely effective in this water. My favorite nymph for this game is a size 8 Bitch Creek Nymph. Wading in below the anticipated feeding areas, I cast this nymph about six feet above a specific pocket. This allows time for the weighted nymph to drift into the desired areas close to the bottom which is where the trout are holding. It is imperative that a tight line be maintained in order to detect the strike. Since it is desirable to have the nymph drift at the natural speed of the current, it is necessary to see the strike as the trout picks up the nymph. I find I can see these strikes best with one or two Scientific Anglers Indicators placed three or five feet above the nymph. These can be clearly seen several feet below the surface, telegraphing the slightest hint of a strike. Floating indicators are fine in some situations, but here they often rob me of the depth I need from my nymphs.

Streamers which imitate minnows such as shiners and dace also can be effective in these streams. The Silver Outcast, representing the former, and the Black Nose Dace mimicking the

*The Prince Nymph, featured right, is an excellent fly for many streams having too much water for good dry fly action. Below, a brown trout could not resist a small dry fly drifted delicately over his feeding station; photos by Harry Murray.*



latter, are the best flies I know for this fishing. Casting these patterns down and across stream below the riffles will take many nice trout.

Spin fishermen make good catches in these same areas with spinners made to act and flash about in the same manner the minnows do. Two of the most productive are the Silver Mepps Aglia size 0 and the Silver Rooster Tail 1/24 ounce. These spinners are cast across the riffles and deeper pockets and allowed to sink deeply before starting the retrieve. Since the current will be pulling tightly on the lure once the retrieve is started, it is best to use a very slow cranking pace to prevent pulling it up too far off the stream bottom. This

desirable deep action can also be aided by keeping the rod tip at a low angle.

Big Stoney Creek, west of Edinburg in Shenandoah County, is a good example of this type water. The Virginia Department of Game and Inland Fisheries stocks these streams quite well with trout, and they are at their best in March and April.

The last category of stream which provides good trout fishing for Virginia's early season anglers is exemplified by the Jackson River in Hidden Valley south of Monterey. These are our largest trout streams, and thus have the potential for providing many miles of excellent fishing early in the season. Like the medium-sized





Photo by Doug Stamm.

*This rainbow trout gently netted by an angler is a good early season catch!*

streams discussed earlier, these are well-stocked with trout prior to the beginning of the trout season. Information on specific stocked streams is published elsewhere in this magazine and in many newspapers throughout the state.

The extra water volume found in these streams, however, necessitates the use of special tactics. Like the medium-sized streams just covered, dry fly fishing is at its best on these streams when trout are actually seen feeding upon natural insects floating on the surface. Otherwise, one could waste valuable time fishing over empty water or water too deep to lure trout to the surface.

The major concentrated hatches of

aquatic insects on these streams which will prompt the trout to feed upon the surface are caddisflies. I find that if I carry Olive Elk Hair Caddis and Brown Elk Hair Caddis patterns in sizes 14 through 18, I seldom encounter situations where I cannot take surface feeders during these hatches.

Large nymphs are usually my most successful patterns on these streams. My three favorite patterns are the Strymph, Brook's Dark Stonefly Nymph and Murray's Hellgrammite, the first two in size 8 and the latter in size 10.

A slightly different method of fishing these large nymphs in big streams can bring you almost unbelievable

results. I call this "swing nymphing." Fortunately, it is a system which is easy to master, as demonstrated by the fact that many beginning anglers in my fly fishing schools make very impressive catches with it on their first attempt.

Positioning oneself beside a deep pool or run, the cast is made up and across stream to a point which will permit the nymph to drift down deep onto the trout's dinner table. The trick is to refrain from stripping in any line until the nymph has reached the stream bottom. At this point the fly rod is lifted high at a 45 degree angle out over the line of drift. The strike is usually manifested as a slight tug, which is detected in the line hand or the rod.

Many of these larger streams have excellent populations of sculpin minnows. Ed Shenk's Black Sculpin Streamer in size 8 fished along the stream bottom with a high density sinking tip line will often account for some of the largest trout.

Spin fishermen do well in these larger streams with small plugs which represent minnows. A size 5 Silver Rapala is an exceptionally effective plug here. In addition to the conventional down and across presentation often used with this lure, good catches can be made by fishing it upstream. This method calls for adding one or two BB size split shot six inches above the Rapala. The cast is made upstream beyond deep runs and pockets and jugged back along the bottom.

Spinners such as the Panther Martin in 1/16 ounce will also take many nice trout in these large streams. The dark colors worked slowly through the deep water can easily mimic the movement of minnows.

Yes, Virginia's trout waters can provide a tremendous amount of excellent fishing during the early part of the season if you plan your trip to match your preference and the water conditions. From taking fussy fish on small dry flies to digging out lunkers with plugs, it's all here. Just take your pick. □

*Harry Murray is a frequent contributor and among other pursuits, he teaches fishing and fly tying in Edinburg, Virginia.*



## Delmar Smith Teaches Bird Dog Seminar

Delmar Smith is back! The legendary bird dog trainer from Oklahoma will present a two-day and three-night seminar on bird dog training on April 6, 7, and 8 at Oakland Shooting Preserve in Orange County. Sponsored by the Lahore Bird Dog Club, the Seminar is the only one being offered in Virginia by Delmar this year, and is an intensive, hands-on course for gun dog owners, with participants working their own dogs under Delmar's supervision.

The course covers the basics of field training a bird dog, from yard training to bird work to field trialing a gun dog. Participants will learn first-hand the techniques that have proven successful for the five-time winner of both the National Open and U.S. Open Brittany championships, while being exposed to the gentle humor and wisdom of a trainer who is known to many as the "granddaddy of them all." The seminar is open to anyone with an interest in training their gun dogs not by brute force, but by "thinking like a dog." For information on fees and registration, contact the Lahore Bird Dog Club, c/o Dave Pomfret, Box 1265, Orange, VA 22960. (703) 854-4540. □

## A Good Deal

Mrs. Alice J. Patterson of Glen Allen, Virginia knew a good deal for her three-month old grandson when she saw it. In December, Mrs. Patterson walked into our Richmond office and purchased Mitchell King's first Christmas present—a lifetime fishing license for \$250. You can do the same! Just contact the Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104, or call toll-free 1-800-252-7717 for details. □



## 1990 National Forest Stamp Print Offered

Virginia's 1990 National Forest Stamp art is now being offered as a full color, limited edition print. The painting is by Virginia artist Barclay Sheaks and it has an interesting history. The mounted deer head is the winning rack from the first Virginia Peninsula Sportsman's Association (VPSA) Big Game Trophy Contest which was held in 1940. The location of this trophy was lost for many years and only came into the hands of the VPSA last year when VPSA Director Charlie Rogers saved it from the

inglorious fate of a yard sale. Commissioned to paint a portrait of the mount, Sheak's art became the image for the 1990 National Forest Stamp which commemorated the 50th anniversary of the VPSA's Big Game Trophy Contest.

Issued in a limited edition of 250, the stamp and print combination is available for \$165 from VPSA, c/o Bleeker Street Design, 213 Arcadia Street, Richmond, Virginia 23225, 1-800-848-8870. □

## Correction

In a last minute mixup, we goofed on the captions of two photos in the February issue of *Virginia Wildlife*. The photo on page 32 of "Family Outdoors" is obviously not a red-headed woodpecker. It is a lovely photo of an Eastern bluebird (*Sialis sialis*) in the snow, taken by Spike Knuth. Also, on page 31, the red-headed woodpecker featured there is the species *Melanerpes erythrocephalus*. It is not a Lewis' woodpecker (*Melanerpes lewis*). We're sorry!



photo by Lee Walker

## Spring Courtship Rituals

by Carl "Spike" Knuth

Spring is a time of intense, energetic activity in the world of birds.

Breeding stocks of all species are in the best condition they will be in for the whole year, some having spent the winter in southern climates. Clothed in bright, fresh, colorful plumage, hormonal changes within their bodies begin to move them to mate, nest and reproduce. As migrating birds journey to their breeding grounds, their flights are punctuated by courtship displays of various types as the males try to attract females. The males of each species, now in full breeding colors, go through much bowing, dancing, jumping, head moving, feather fluffing and fighting, in their attempts to woo a mate.

Courtship rituals are present in the lives of all birds to one extent or another, but some are more outstanding than others. Because the breeding periods are so short in the northern latitudes, many waterfowl are already mated as early as the previous autumn. Early migrating goldeneye ducks will gather along open water fringes of thawing lakes and rivers. As they vie for the attentions of a lone hen, they'll go through numerous contortions and displays from "bowsprits" (stretching their necks and pointing their bills upward), to "head throws" (tipping their heads back over their bodies



Wild turkey gobbler and hen; photo by Brad Herndon.

and touching their backs with their bills).

Canvasbacks go through similar exhibitions with swelled necks and bulging chins. In most waterfowl, these displays are performed along with standing up on their tails, beating their chests with their bills or "head-bobbing."

All this is accompanied by chases on the water and in the air. Some species, like the pintails, widgeon and teal, wheel about in the air chasing a female and grabbing at her tail feathers.

Interesting courtship displays are not limited to waterfowl. Other marsh and upland game birds have annual courtship flights and displays. The common snipe flies in wide, rollercoaster-like arcs, emitting a strange, almost yodel-like sound from its wing feathers as it swoops downward. This is known as "winnowing."

The woodcock also has an unusual courting practice. Soon after the late-

March sun dips below the horizon, the cock spirals up into the sky over a hundred feet, levels off, then descends in fluttering, zig-zagging flight. As he drops, he utters a distinct "cheeping" call in the cool evening air. Once on the ground, he struts proudly, calling "peent," attempting to attract a willing female. The

cock ruffed grouse seeks out a "drumming log" where he does his strutting, fans his tail and beats the air with his wings. This actually compresses the air between his wings and results in a booming or "drumming" sound which attracts females to his territory. The wild turkey also gobbles, struts, fans, hisses and drags his wings to impress and attract hens.

Songbirds, marsh birds and water birds, too, have their courtship rituals. The variety of dances, displays, calls and flight antics during courtship is almost unending. Males and sometimes even the females squabble and fight. The male cardinal feeds the female tibits of food. Some hawks and owls go through a series of dives, deadfalls and loops. Grebes stand on their tails and rush across the water. Egrets dance with wings spread and plumes extended. These beautiful and sometimes comical courtship displays are entertaining to watch; but more importantly, are crucial events in the preparation of different birds to reproduce their kind. □



## Providing Water

by Nancy Hugo

I remember reading once that a wildlife garden without a pond is like a theater without a stage. The analogy made a lasting impression and reminded me that all the time I was spending planting berry-bearing bushes might be better spent keeping the birdbath filled.

Water is essential in any wildlife habitat, but it's the element most often missing from backyard habitats. It may be fear of mosquitoes that keeps many of us from providing water for wildlife, but most mosquito larvae take two weeks to develop into adults, and we need to blast our birdbaths with the hose or dump and refill them more often than that to keep them clean. Fish like gambusia which eat mosquito larvae will keep larger backyard pools and small ponds mosquito free.

Not only will a backyard water source attract songbirds, but a watering hole can be a boon to small mammals, reptiles, amphibians and even butterflies. Nothing more than a mud puddle will attract male butterflies who form drinking clubs around the edges of mud puddles. Toads like to sit in ground level water sources where they absorb moisture through their skin.

One expert insists that we should take all our birdbaths off their pedestals to make them more accessible to small mammals, reptiles, etc. That's certainly one way of providing water for a greater variety of wildlife, but it may spell trouble if you have cats. If possible, locate birdbaths (whether on pedestals or on the ground) in

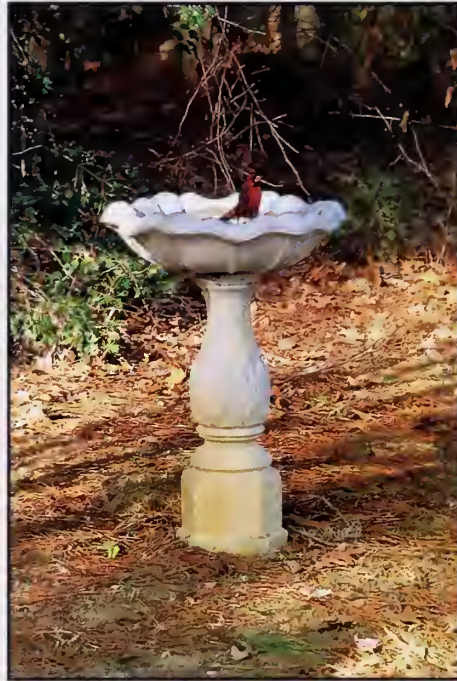


photo by Roy Edwards

areas open enough to allow birds to spot approaching predators, but close enough to cover to allow them to escape. A wet bird is particularly vulnerable prey.

Providing water in a backyard habitat can be as easy and inexpensive as keeping an inverted trash can lid filled with water. A "dead wok" also holds water as well as the fanciest lead bird bath. Just be sure to keep the water shallow—not over 3 inches deep—because birds like to do their bathing in knee deep water. A birdbath that has gently sloping sides and a rough surface like that of cement is ideal.

If you're more ambitious, you might want to install a small pool or

pond. These can be constructed by lining an excavation with cement or heavy gauge PVC plastic or by installing a prefabricated fiberglass pool. Plastic liners can be had for about \$60 for an 8 X 10' sheet, fiberglass pools run from about \$225 to \$1000. Plastic liners have the advantage of not only economy but of allowing you to design the size and shape of your pool yourself. But whichever type of pool you install, be sure to locate it where it will receive at least five hours of sunlight a day, because it will need that much sun to support the oxygenating plants necessary to keep the water clean. Lilypons Water Gardens (6800 Lilypons Road, P.O. Box 10, Lilypons, MD 21717-0010) is a good source of products and information on pools and small ponds.

Finally, anything you can do to keep the water moving will make your water source doubly attractive to wildlife. Elaborate fountains and waterfalls will turn an ordinary watering hole in to the most popular drinking spot on the block, but an ordinary pail with a hole in the bottom will do the job, too.

Just hang a pail with a tiny hole in the bottom from a tree limb or other support over your birdbath. To keep the drip really slow you may have to pull a cotton string through the hole to slow the flow or fill your first hole with hot glue and then puncture it with a needle. The steady drip from your bucket will create ripples in the water below that draw wildlife to your garden like a magnet. □

## Spring Cleaning Your Boat

by William Antozzi

The snow is gone. Some trees and bushes are beginning to show the evidence of new leaves. The time has come for boaters to get things organized.

Boat operators should make sure that the fuel tanks are full. If they had gasoline stored in them all winter and water is found in the tanks, it may be necessary to add conditioner. Filter-separators should be drained and cleaned and the fuel pump bowls and strainers need to be cleaned. Carburetors should be drained and sprayed with light oil. Gaskets should be checked and the backfire-flame arrestor screens must be cleaned. The entire fuel system has to be inspected for leaks.

Ignition systems need a going-over. Battery terminals should be disconnected and cleaned and batteries charged, if necessary. Coils and distributors need a cleaning and spray with light oil. It is a good time to remove spark plugs, spray their bases and threads with oil, clean threads in holes, and replace plugs as needed. Spark plug wires may need inspection and testing for resistance. Cables, terminals, switches, circuit-breakers, gauges, senders and fuses should be cleaned and sprayed with light oil.

The cooling systems need some work such as draining, flushing or adding antifreeze to closed systems, checking heat exchangers for deposits, replacing sacrificial zincs (if 50 percent gone), cleaning strainers, cleaning the "weep-hole" in water pumps, testing belt-tension and condition, inspecting hoses for leaks and cracks, and checking oil coolers for deposits.

Boats with cable steering need cable

inspection and lubrication. Hydraulic steering fluid wells need to be filled, the cylinder rods need lubrication and lines and fitting should be checked. Tilt-trim controls need similar attention.

Outboard engines and sterndrivers need appropriate general attention as indicated above, and in addition, the lower unit requires draining and replacement of oil, propeller shaft lubrication and possible cotter-pin replacement. If a starter cord is used, replacement may be necessary. Mounting brackets, clamps and locks securing outboards to transoms may need to be tightened. Boat trailers need attention to tires, wheel bearings, lighting systems, and brakes.

All boaters with vessels which have fuel tank shutoff valves must remember to open the valves so fuel can get from the gas tanks to the carburetors. If the engines suck in water for cooling, seacocks must be opened to permit water to flow into the intake hose. If boats are equipped with windshield wipers, they should be activated and wipe-blades replaced if necessary. All dirt and debris should be cleaned out of boats and kept out all season. Freshwater (drinking water) systems require draincocks to be closed, systems filled with fresh water and all faucets opened so that water can be pumped out. That procedure will eliminate sediment and any antifreeze which may have been used. The water tank is then refilled with fresh water.

Boats with inboard engines and a through-hull propeller shaft have a stuffing box which need repacking on a regular basis. Now is the time to

take care of that little chore, before the boat begins to take on water.

Most boaters will want to do a general boat cleaning job and will assemble the necessary rags, brushes, mops, cleaners and polishes. Some cleansers can be harmful if they are used on a surface for which they were not designed. A solvent for greasy mechanical parts could blister paint or dull the gelcoat finish. Abrasive cleaners may be fine or coarse, depending on the job to be done. They should not be used on glossy surfaces unless specifically designed for them. They usually work well on metals and other hard surfaces.

Boaters will want to make sure that boats are seaworthy and now is the time to gather all that safety equipment which was put away last fall and get it back on board where it will do some good. While putting it back, it must be checked over to make certain that it is still functional. For example, personal flotation devices must be inspected to make sure the fabric hasn't rotted. Those with vinyl linings should be checked to insure that the vinyl has not been punctured. All PFDs must be thoroughly gone over to make sure that straps are securely fastened. They must be Coast Guard approved. Emergency or distress signal equipment, lines, bilge pumps, first aid kits and fire extinguishers must be checked to see if everything works. Lights, horns and whistles must be tried. An important action is to replace drainplugs in hulls.

Get ready early and have fun this year. □



## A Springtime Trout Dinner

by Joan Cone

Spring is here, or nearly so, and the trout season opens on March 17th. Even though the streams may run high and perhaps a bit muddy, it feels good to get outdoors to seek some of Virginia's most beautiful and delicious fish.

As with most fish, trout should be kept cool and cleaned as soon as possible. Some gourmets prefer browns and brookies to rainbows, claiming the latter a bit dry. Frankly, I have never met a trout I did not like.

A good way to cook small trout, from seven to 10 inches, is to saute them quickly in a skillet using butter or margarine and fresh lemon juice. Larger trout are best prepared in aluminum foil to keep them moist and flavorful. Foil wrapped trout may be cooked over hot coals on a campfire or in your kitchen oven. Leftover trout is excellent served cold the next day.

### Menu:

*Creamy Mushroom Soup*

*Trout In Foil*

*Baked Cheese Grits*

*Sesame Asparagus*

*Beet Horseradish Ring*

*Strawberry Glaze Pie*

### Creamy Mushroom Soup

1 can (4 ounces) sliced mushrooms,  
drained, reserving liquid  
2 tablespoons chopped onion  
2 tablespoons margarine or butter  
¼ cup flour  
2 beef bouillon cubes  
Hot water  
¼ teaspoon basil leaves, crushed  
1 bay leaf  
Dash pepper  
1 cup half and half

In medium saucepan, saute mushrooms and onion in margarine until onion is tender. Stir in flour until

well blended. Add hot water to reserved mushroom liquid to make 2½ cups. Dissolve bouillon cubes in water; add to mushroom mixture. Stir in basil, bay leaf and pepper. Cook and stir until slightly thickened. Reduce heat, cover and simmer 10 minutes. Remove bay leaf. Add half and half; cook until heated through.

### Trout In Foil

Allow ½ pound of pan dressed trout per person. Place each trout (10 inches or larger) in center of large sheet of foil; cup foil up around fish. Sprinkle with salt and pepper; top with 2 tablespoons butter or margarine and 2 thin slices of lemon. A dash of dill or basil may be added. Pour 2 to 4 tablespoons (depending on size of trout) of white table wine over each fish. Pull foil edges together; seal well, leaving small air space inside. Bake in 400 degree oven for 30 minutes or until fish flakes easily when tested with a fork.

### Baked Cheese Grits

3 cups water  
¾ cup quick grits  
½ teaspoon salt  
1 cup (4 ounces) shredded cheddar cheese  
2 tablespoons butter or margarine  
1 egg, beaten  
Dash red pepper sauce

Heat oven to 350 degrees. Grease a 1-quart casserole. Stir in grits and salt slowly into briskly boiling water in a heavy saucepan. Return to boil; reduce heat. Cook 2½ to 5 minutes, stirring occasionally. Remove from heat and stir in remaining ingredients. Continue cooking over low heat until cheese is melted. Pour into prepared casserole and bake 1 hour. Let stand 5 minutes before serving. Makes 4 to 6 servings.

### Sesame Asparagus

1 pound asparagus  
1 quart water  
1 tablespoon sugar  
1 teaspoon salt  
1 tablespoon sesame oil  
1 tablespoon vinegar

Wash asparagus and break the tender part into 2-inch pieces. Place pieces in pan, pour boiling water over and cook, uncovered, for 4 minutes. Drain and cool under cold water for a few seconds. Combine remaining 4 ingredients and pour over asparagus on serving dish. Let stand for a few minutes before serving. Makes 4 servings.

### Beet Horseradish Ring

1 cup sliced canned beets, cut into ½-inch strips (drain and reserve juice)  
1 package (3 ounces) lemon Jello  
½ cup boiling water  
1 cup beet juice (from beets)  
3 tablespoons vinegar  
4 tablespoons horseradish

Drain beets and reserve 1 cup of beet juice. Dissolve lemon Jello in ½ cup boiling water. Add vinegar and beet juice. When slightly thickened, add beets and horseradish. Pour into small mold and chill. Makes 4 to 6 servings.

### Strawberry Glaze Pie

1 cup sugar  
1 cup water  
3 tablespoons cornstarch  
½ of a 3-ounce package strawberry Jello  
1 pint strawberries, capped and rinsed  
1 baked 9-inch pie shell

Combine sugar, water, cornstarch and Jello in a saucepan. Heat until mixture comes to a rolling boil. Cool. Place sliced or whole strawberries in baked pie shell. Pour mixture over berries. Chill several hours before serving. Serve with whipped topping. Makes 6 servings.

# Don't Keep Them Waiting

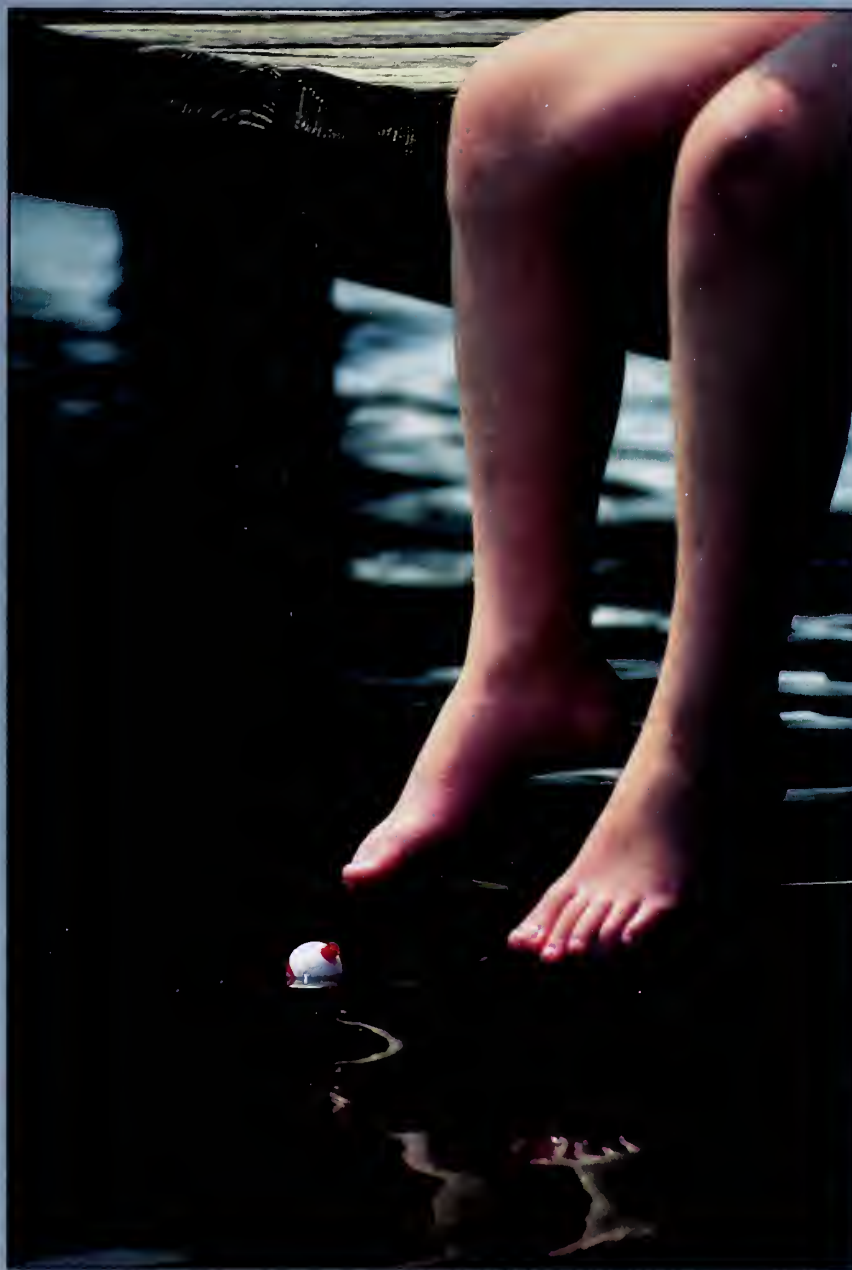


photo by Garry Walter

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